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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,914	03/11/2004	Ronald Leroy Billau	ROC920030360US1	7009
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MARTIN & ASSOCIATES, LLC			EXAMINER	
P.O. BOX 548			PANTOLIANO JR, RICHARD	
CARTHAGE, MO 64836-0548			ART UNIT	PAPER NUMBER
			2194	
			MAIL DATE	DELIVERY MODE
			10/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/798,914

Applicant(s)

BILLAU ET AL.

Examiner

Richard Pantoliano Jr

Art Unit

2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-11,13-16,19,21-23,25-27,29-31,34 and 38-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-11,13-16,19,21-23,25-27,29-31,34 and 38-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is filed in response to amendments received on 17 July 2007 for Application# **10/798,914**. **Claims 1, 3-6, 8-11, 13-16, 19, 21-23, 25-27, 29-31, 34, and 38-41** are currently pending and have been considered below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 2, 7, 12, 18, 20, 24, 28, 32, 37, and 45** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmid et al (US Pat: 6,530,078), hereafter Shmid.

4. As per **Claim 1**, Shmid discloses the invention substantially as claimed including an apparatus comprising:

(A) at least one processor (Col. 7, lines 48-61);

(B) a memory coupled to the at least one processor (Col. 7, lines 62-67) (The "main storage unit" meets this claim limitation);

(C) first and second logical partitions defined on the apparatus, the first logical partition controlling a shared network I/O adapter and the second logical partition using the shared network I/O adapter controlled by the first logical partition (Col. 3, lines 33-46; Col. 5, lines 31-65 and Col. 6, lines 52-65) (The "host" and "guest" represent the logical partition between at least two operating systems running on the same computer;

the host has direct access to all hardware within the system, while the guests have access to the host-controlled hardware through emulated versions of that hardware)

(D) an I/O adapter sharing mechanism residing in the memory and executed by the at least one processor, the I/O adapter sharing mechanism comprising:

(D1) an I/O adapter device driver in the first logical partition, the I/O adapter device driver including a hardware interface to the shared network I/O adapter (Col. 6, lines 33-46 and Fig. 3.1) (All devices in a computer inherently require a device driver; therefore, the use of a network adapter, a device within a computer, meets this claim limitation);

(D2) a virtual device driver in the second logical partition, wherein the virtual device driver provides a set of functions at least partially determined by functions available in the I/O adapter device driver in the first logical partition (Col. 3, lines 33-46; Col. 5, lines 31-65 and Col. 6, lines 52-65) (Since the guest cannot transmit anything over the host that the host is not inherently capable of transmitting, the transmission of data over the channel-to-channel (CTC) adapter and token ring (TRN) adapter must be based on the functions already available to the host, thereby meeting this claim limitation); and

(E) a communication mechanism that controls exchange of information between the virtual device driver and the I/O adapter device driver (Col. 6, lines 33-46)(The "agents" passing information between the host and guests via virtual CTC (VCTC) and virtual TRN (VTRN) adapters meet this claim limitation).

Art Unit: 2194

5. Shmid further impliedly teaches wherein the set of functions for the virtual device driver is at least partially determined by querying the I/O adapter device driver for its available functions (Col. 36, lines 65-67 and Col. 37, lines 20-33).

6. It would have been obvious to one of ordinary skill in the art that Shmid impliedly teaches the querying of the I/O adapter device to determine the available functions. Since the guest is given access to all functions available via the host operating system through the virtualized device (Col. 9, lines 4-48), the virtualized device and its driver must have access to all functions of the real device in order to make those functions available to guest operating systems. Also, Shmid discloses that the virtual machine (VM), upon which the guest operating system runs within the host, is capable of querying for the features of a device in the system for the purpose of configuring the VM (Col. 36, lines 65-67 and Col. 37, lines 20-33).

7. As per **Claim 3**, Shmid further teaches a transfer mechanism that transfers data between the virtual device driver and the shared network I/O adapter without the data passing through the I/O adapter device driver (Col. 14, lines 11 – 65) (Guest operating systems (OSs) can be assigned direct and/or exclusive control of devices when necessary, thereby meeting this claim limitation).

8. As per **Claim 4**, Shmid further teaches wherein the communication mechanism comprises a partition manager that communicates between the first and second logical partitions (Col. 6, lines 33-65) (The “agents” meet this claim limitation).

9. As per **Claim 5**, Shmid further teaches a hosting interface in the first logical partition that communicates between the I/O adapter device driver and the partition manager, wherein the partition manager communicates between the hosting interface in the first logical partition and the virtual device driver in the second logical partition (Col. 6, lines 4-23 and Col. 9, lines 4-60).

10. As per **Claims 6, and 8-10**, being directed to the apparatus containing substantially similar limitations to the apparatus of **Claims 1, and 3-5**, these claims are rejected for the same reasoning as applied to **Claims 1, and 3-5**.

11. As per **Claims 11, and 13-15**, being directed to the apparatus containing substantially similar limitations to the apparatus of **Claims 1, and 3-5**, these claims are rejected for the same reasoning as applied to **Claims 1, and 3-5**.

12. As per **Claim 16**, being directed to the apparatus containing substantially similar limitations to the apparatus of **Claims 1, and 3-5**, this claim is rejected for the same reasoning as applied to **Claims 1, and 3-5**.

13. As per **Claims 19, 21 and 22**, being directed to the method utilized by the apparatus of **Claims 1, 3 and 4**, these claims are rejected for the same reasoning as applied to **Claims 1, 3 and 4** above.

14. As per **Claims 23, 25 and 26**, being directed to the method utilized by the apparatus of **Claims 6, 8 and 9**, these claims are rejected for the same reasoning as applied to **Claims 6, 8 and 9** above.

15. As per **Claims 27, 29 and 30**, being directed to the method utilized by the apparatus of **Claims 11, 13 and 14**, these claims are rejected for the same reasoning as applied to **Claims 11, 13 and 14** above.

16. As per **Claim 31**, being directed to the method utilized by the apparatus of **Claims 16 and 17**, this claim is rejected for the same reasoning as applied to **Claims 16 and 17** above.

17. As per **Claims 34, and 38-40**, being directed to the program product implementing the apparatus of **Claims 1, and 3-5**, these claims are rejected for the same reasoning as applied to **Claims 1, and 3-5** above.

18. As per **Claim 41**, being directed to the program product implementing the apparatus of **Claims 16 and 17**, this claim is rejected for the same reasoning as applied to **Claims 16 and 17** above.

Response to Arguments

19. Applicant's arguments filed **17 July 2007** have been fully considered but they are not persuasive.

20. Applicant argues in substance:

a) Shmid fails to teach querying a virtual device driver as claimed in Claim 1 and that Examiner relies on assumption that the querying occurs

b) Shmid fails to teach a "transfer mechanism that transfers data between the virtual device driver and the shared network I/O adapter without the data passing through the I/O adapter device driver" as claimed in Claim 3.

21. As to (a), Examiner respectfully disagrees. As is clearly stated on col. 37, lines 21-30, the guest is capable of querying a device and its features using the diagnose command. As clearly stated in col. 14, lines 11-65, devices are directly assigned to guests within the system using the ATTACH command, either during the initialization of the guest or by an administrator issuing the command at a command console. Therefore, a device that is directly assigned to a guest can be queried for its features, thereby meeting the claim limitation.

22. As to (b), Examiner respectfully disagrees based on the argument provided above for (a). Hardware devices are directly allocated to guest devices. Since the device driver executing on the guest is executing on a virtual machine, the driver constitutes a virtual device driver. Since the actual allocation step of the device to the

guest system is controlled by the main operating system, the device is under the control of the main operating system. For all of these reasons, the claim limitation is met.

23. As to all other pending claims, they were argued for the same reasoning as applied to (a) and (b), and are therefore rejected for the same reasoning.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

25. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2194

26. The prior art made of record on the P.T.O. 892 that has not relied upon is considered pertinent to applicant's disclosure. Careful consideration of the cited art is required prior to responding to this Office Action, see 37 C.F.R. 1.111(c).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Pantoliano Jr whose telephone number is (571) 270-1049. The examiner can normally be reached on Monday-Thursday, 8am - 4 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on (571)272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RP
10/01/2007


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